Appendix B Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

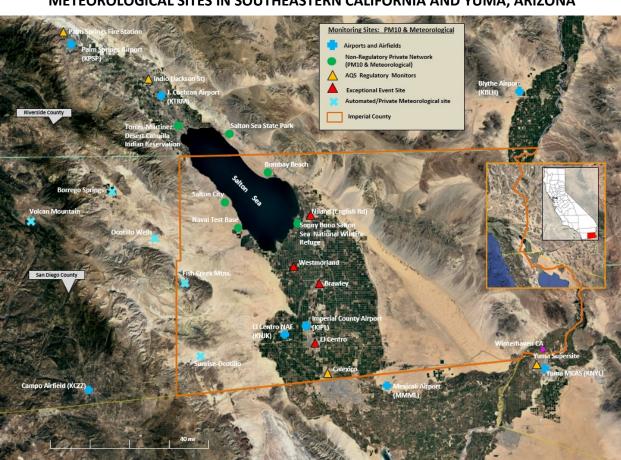


FIGURE B-1
METEOROLOGICAL SITES IN SOUTHEASTERN CALIFORNIA AND YUMA, ARIZONA

Fig B-1: This image shows the meteorological sites and the air quality monitoring sites used in this document. Google Earth base map. Inset locator map of California from Wikipedia

IMPERIAL COUNTY SITES

FIGURES B-2 THROUGH B-13

FIGURE B-2 IMPERIAL COUNTY AIRPORT (KIPL) WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

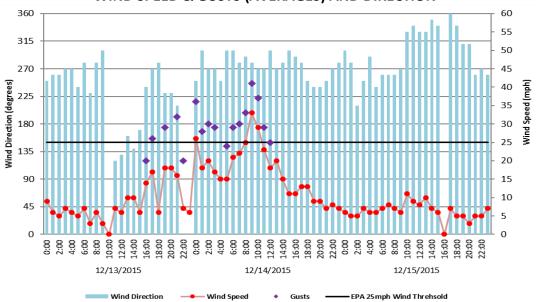
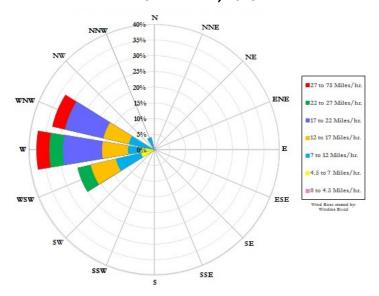


FIGURE B-3
IMPERIAL COUNTY AIRPORT (KIPL) WIND ROSE
DECEMBER 14, 2015



Figs B-2 & B-3: Wind data from the NCEI's QCLCD system

FIGURE B-4
EL CENTRO NAF (KNJK)
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

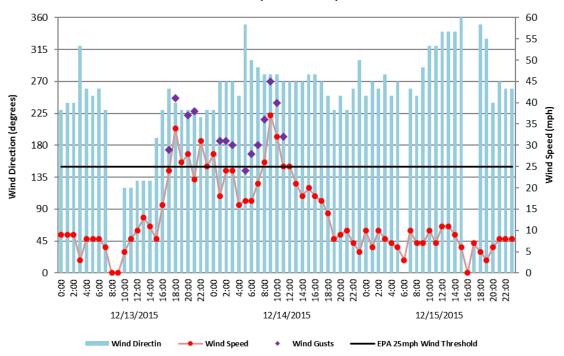
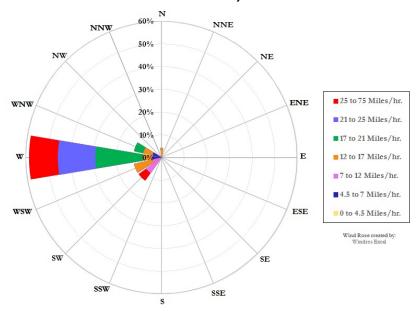


FIGURE B-5
EL CENTRO NAF (KNJK) WIND ROSE
DECEMBER 14, 2015



Figs B-4 & B-5: Wind data from the NCEI's QCLCD system

FIGURE B-6
CALEXICO (ETHEL ST)
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

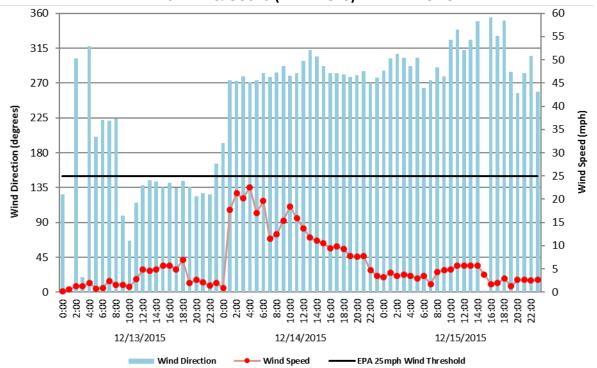
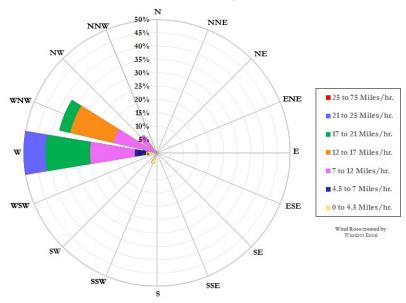


FIGURE B-7
CALEXICO WIND ROSE
DECEMBER 14, 2015



Figs B-6 & B-7: Wind data from the EPA's AQS data bank

FIGURE B-8
EL CENTRO (9TH ST)
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

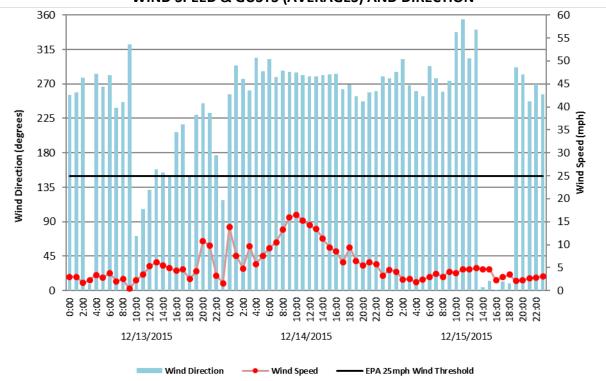
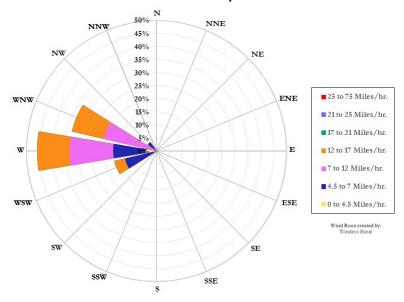


FIGURE B-9 EL CENTRO WIND ROSE DECEMBER 14, 2015



Figs B-8 & B-9: Wind data from the EPA's AQS data bank

FIGURE B-10
NILAND (ENGLISH RD)
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

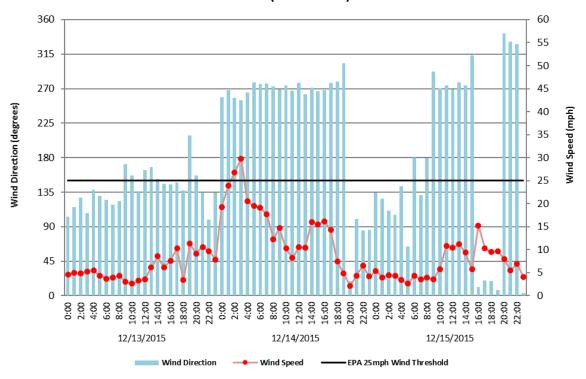
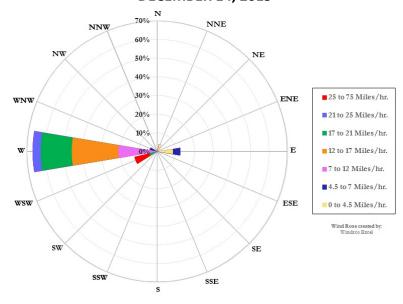


FIGURE B-11 NILAND WIND ROSE DECEMBER 14, 2015



Figs B-10 & B-11: Wind data from the EPA's AQS data bank

FIGURE B-12
WESTMORLAND
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

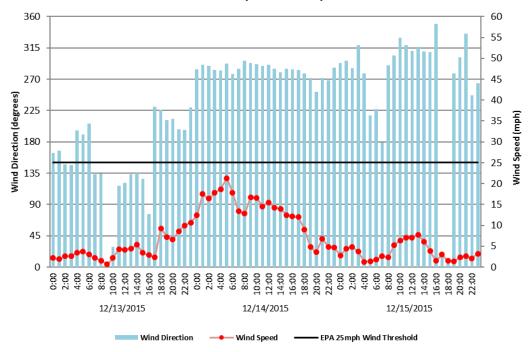
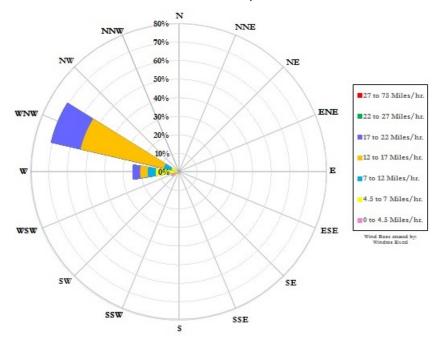


FIGURE B-13
WESTMORLAND WIND ROSE
DECEMBER 14, 2015



Figs B-12 & B-13: Strong WNW winds are confirmed by the wind rose at Westmorland

RIVERSIDE COUNTY AND YUMA COUNTY SITES

FIGURE B-14 PALM SPRINGS INTERNATIONAL AIRPORT (KPSP) WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

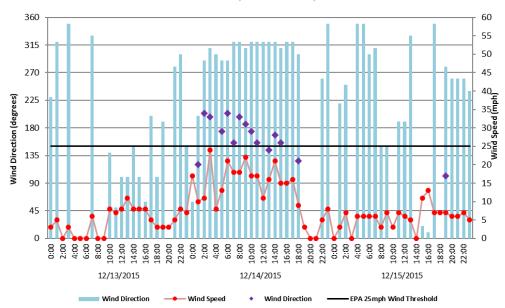


Fig B-14: Data from the NCEI's QCLCD system

FIGURE B-15 JACQUELINE COCHRAN AIRPORT (KTRM) WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

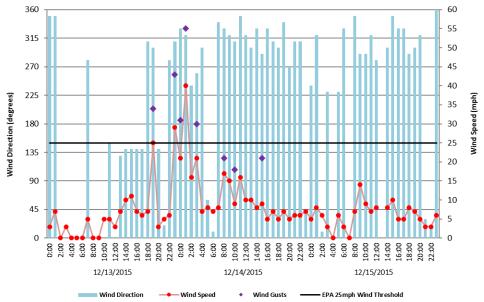


Fig B-15: Data from the NCEI's QCLCD system

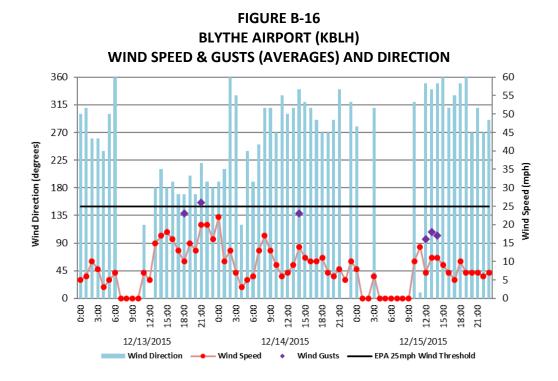


Fig B-16: Data from the NCEI's QCLCD system

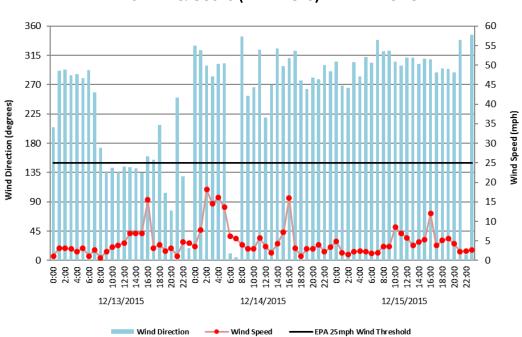


FIGURE B-17
TORRES MARTINEZ DESERT CAHUILLA RESERVATION
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

Fig B-17: Data from the NCEI's QCLCD system

SOUTHWESTERN ARIZONA

FIGURE B-18 YUMA, ARIZONA MCAS (KNYL) WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

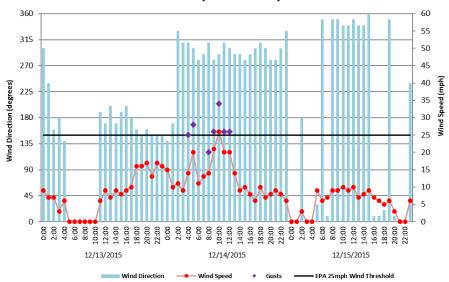


Fig B-18: Data from the NCEI's QCLCD system

SAN DIEGO COUNTY

FIGURE B-19 CAMP AIRPORT (KCZZ) WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

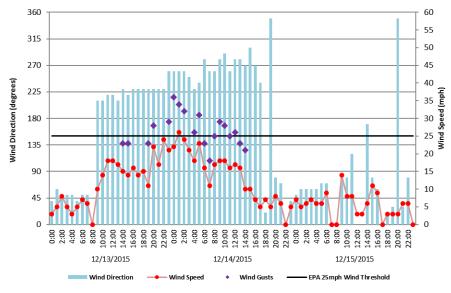


Fig B-19: Data from the NCEI's QCLCD system

UPSTREAM SITES

FIGURE B-20 FISH CREEK MOUNTAINS WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

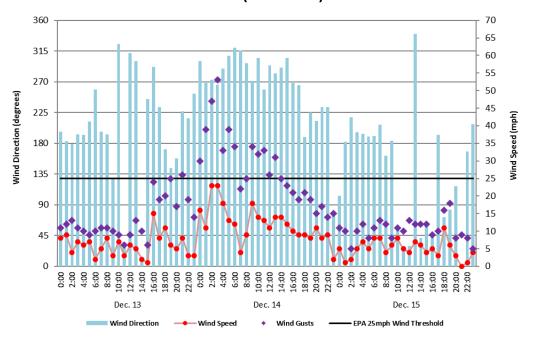
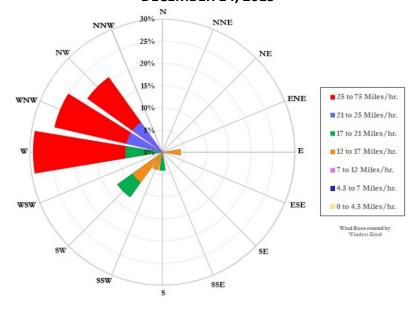
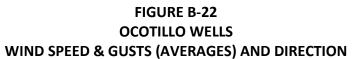


FIGURE B-21
FISH CREEK MOUNTAINS WIND ROSE
DECEMBER 14, 2015



Figs B-20 & B-21: Wind rose is for gusts. Wind data is from the University of Utah's MesoWest. Station ID: FHCC1



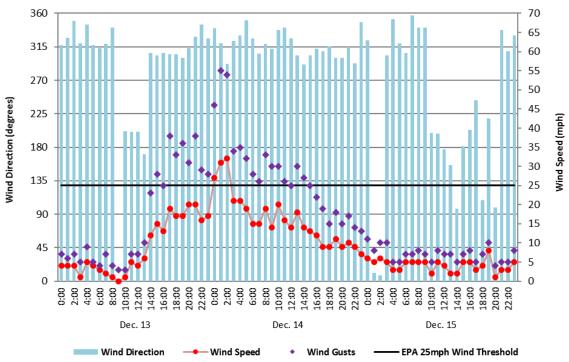
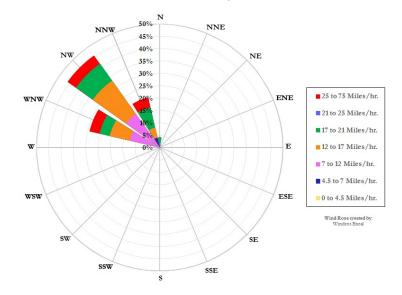


FIGURE B-23 OCOTILLO WELLS WIND ROSE DECEMBER 14, 2015



Figs B-22 & B-23: Wind data is from the University of Utah's MesoWest. Station ID: AS398/KD6RSQ5

FIGURE B-24
SUNRISE-OCOTILLO
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

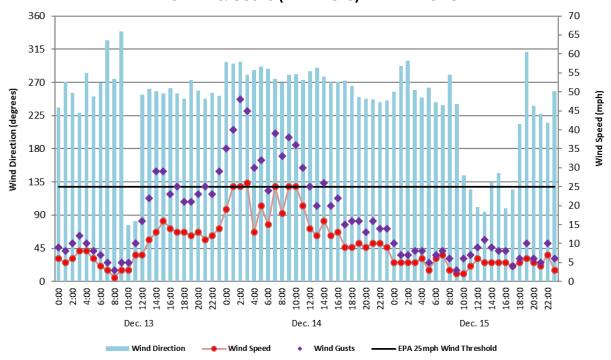
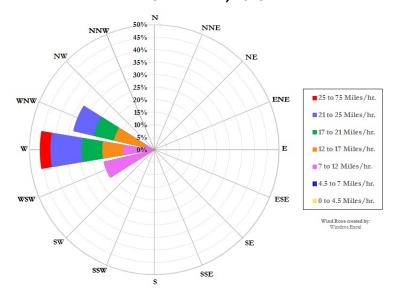


FIGURE B-25 SUNRISE-OCOTILLO WIND ROSE DECEMBER 14, 2015



Figs B-24 & B-25: Wind data is from the University of Utah's MesoWest. Station ID: AS398/KD6RSQ5

FIGURE B-26
VOLCAN MOUNTAIN
WIND SPEED & GUSTS (AVERAGES) AND DIRECTION

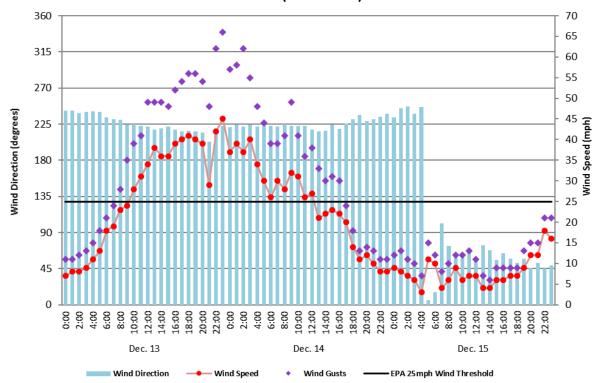
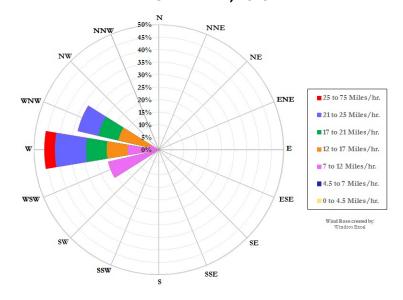


FIGURE B-27
VOLCAN MOUNTAIN WIND ROSE
DECEMBER 14, 2015



Figs B-26 & B-27: Wind data is from the University of Utah's MesoWest. Station ID: VCMSD

FIGURE B-28 NAVAL TEST BASE WIND SPEED AND DIRECTION

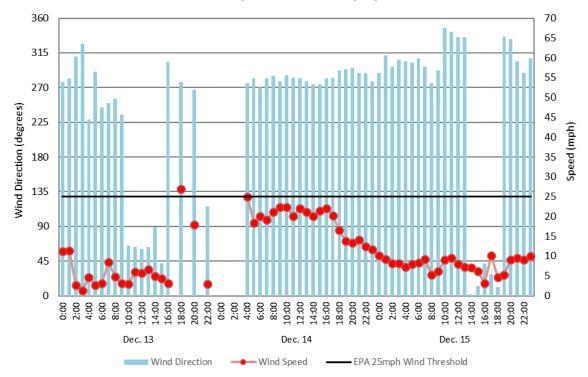
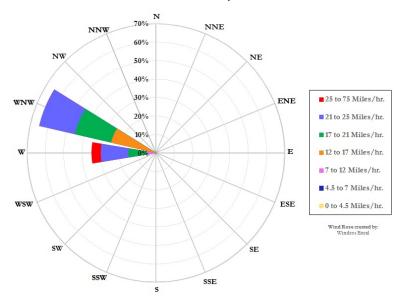
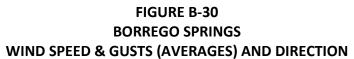


FIGURE B-29 NAVAL TEST BASE WIND ROSE DECEMBER 14, 2015



Figs B-28 & B-29: Wind data is from AQMIS2



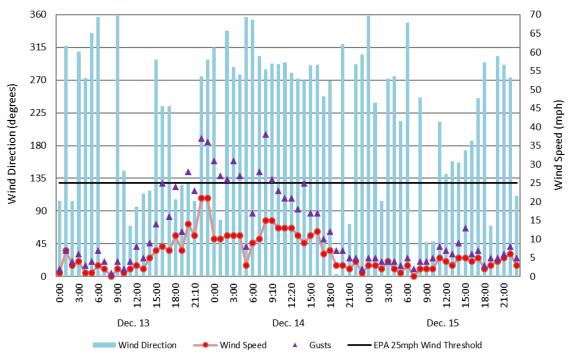
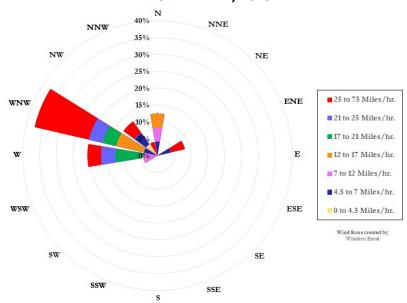


FIGURE B-31 BORREGO SPRINGS WIND ROSE DECEMBER 14, 2015



Figs B-30 & B-31: Wind data is from the University of Utah's MesoWest. Station ID: BRGSD

FIGURE B-32 **IMPERIAL COUNTY AIRPORT QCLCD**

U.S. Department of Commerce National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final)
HOURLY OBSERVATIONS TABLE
IMPERIAL COUNTY AIRPORT (03144)
IMPERIAL, CA

(12/2015)

National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -58 ft. below sea level Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	В	Ory Julb emp (C)	Wet Bulb Temp	P	Dew Point emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	7	8	9 10	11	12	13	14	15	16	17	18	19	20	21	22	23
13 13 13 13	0253 0353 0453 0653 0653 0753 0853 1024 1053 1153 1253 1353 1453 1653 1753 1853 1953 2053 2153	12 12 12 12 12 12 12 12 12 12 12 12	CLR	10.00 10.00		47 49 43 42 48 55 61 65 67 70 71 72 68 66 62 65 64 65 64	9.4 8.3 9.4 6.1 5.6	39 4.1 40 4.2 39 3.8 40 4.2 37 2.5 36 2.2 36 2.3 40 4.3 44 6.8 47 8.3 48 9.0 48 8.9 50 10.2 51 10.4 50 10.2 53 11.8 52 10.9 54 12.0 54 11.9 55 11.9 55 11.2 55 11.5 55 15 10.4	27 26 27 26 28 31 30 28 27 32 29 24 24 24 24 24 39 37 32 43 43 43	2.8 3.3 2.8 2.8 3.3 2.2 2.2 2.8 0.0 1.1 2.2 2.8 0.0 6.1 6.1 6.1 6.1 6.7	43 46 41 53 55 53	65765736300761006147618867	270 280 230 230 210	26 29 32 20	30.10 30.10 30.10 30.09 30.09 30.10 30.11 30.11 30.11 30.11 30.11 30.12 30.12 30.12 29.96 29.96 29.96 29.94 29.92 29.92 29.98 29.89 29.88			30.04 30.03 30.03 30.03 30.04 30.04 30.06 30.06 30.06 30.06 30.09 29.98 29.95 29.99 29.88 29.88 29.88 29.88 29.88	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		30.04 30.04 30.03 30.03 30.03 30.03 30.05 30.05 30.06 30.05 30.06 30.05 30.06 29.98 29.92 29.90 29.88 29.83 29.83 29.83 29.83

Dynamically generated Tue May 03 19:12:25 EDT 2016 via http://www.ncdc.noaa.gov/qclcd/QCLCD

U.S. Department of Commerce National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA

(final)
HOURLY OBSERVATIONS TABLE
IMPERIAL COUNTY AIRPORT (03144)
IMPERIAL, CA
(12/2015)

National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -58 ft. below sea level Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type		В	Dry Julb emp	В	Vet ulb mp	P	ew oint emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in, hg)		Net 3-hr Chg	Sea Level Pressure	Report Type	Precip. Total (in)	Alti- meter (in. hg
							(F)	(C)		(C)		(C)		. ,		` '	. 57		(mb)	(in. hg)		. ,	
1	2	3	4	5		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
		12	BKN070	10.00				18.3					50	26	250		29.83			29.77	AA		29.77
		12	SCT022 OVC070	3.00	HZ		62	16.7							310	20	29.85			M	SP		29.79
	0133	12	SCT017 OVC070 BKN015 OVC070	2.50	HZ HZ		62 61	16.7 16.0	51	10.5			45 39	16 15	300	25 28	29.86 29.86			M	SP SP		29.80
		12	BKN013 OVC070	1.75	HZ			16.0				2.0								M	SP		
			BKN013 OVC070 BKN013 OVC070	1.50				16.0					38				29.86			M			29.80 29.80
		12	SCT013 OVC075	1.50	HZ HZ			16.1			35	1.7	38				29.86			29.80	AA SP		
				2.00													29.86			M			29.80
		12	SCT013 OVC075	3.00	HZ		61	16.1	49	9.4	36		39		290		29.87			M	SP		29.81
		12	SCT016 OVC075	2.50	HZ			16.1					38		290		29.88			M	SP		29.82
		12	BKN018 OVC075	4.00	HZ			15.6			36		41	18	280	23	29.87				SP		29.81
		12	BKN020 OVC080	4.00	HZ			15.0			36		42	20			29.86			29.80	AA		29.80
		12	SCT016	8.00				14.4			32						29.87			M	SP		29.81
		12	CLR	10.00			57	13.9			32		39		340		29.89			29.83	AA		29.83
		12	BKN016	4.00	HZ			13.9				-0.6			300		29.88			M	SP		29.82
		12	BKN014	4.00	HZ			13.3				-0.6			290		29.89			M	SP		29.83
		12	SCT014	7.00			55	13.0	44	6.6		-1.0			250		29.88			M	SP		29.82
		12	SCT014	9.00				12.8					40		250		29.88			29.81	AA		29.82
		12	BKN024	5.00	HZ			13.3					42				29.89			M	SP		29.83
		12	OVC024	6.00	HZ			14.4				-0.6					29.90			29.83	AA		29.84
		12	SCT018	6.00	HZ		55	12.8	44	6.8		-0.6			310	26	29.91			M	SP		29.85
		12	FEW010	4.00	HZ			13.3			30	-1.1	37	21			29.90			29.84	AA		29.84
		12	SCT008	3.00	HZ			13.3			29	-1.7	36		290		29.90			M	SP		29.84
	0740	12	BKN008	3.00	HZ		56	13.3	44	6.7	29	-1.7	36	21	280	30	29.90			M	SP		29.84
		12	BKN009	4.00	HZ			13.9				-1.7	34	22	280	29	29.90			29.84	AA		29.84
		12	SCT009	4.00	HZ			13.9				-2.8	32	22			29.90			M	SP		29.84
		12	BKN009	2.50	HZ			13.9			27	-2.8	32	25	280		29.90			M	SP		29.84
		12	BKN011	3.00	HZ			14.4				-2.8		25	280		29.90			M	SP		29.84
		12	SCT013	5.00	HZ			15.0			25	-3.9					29.91			M	SP		29.85
		12	FEW013	8.00				14.4			25	-3.9	28				29.93			29.87	AA		29.87
		12	SCT013	1.75	HZ			15.6				-5.6					29.93		ı	M	SP	I	29.87
		12	BKN013	1.50	HZ			16.0			23	-5.0	23	28			29.93			M	SP	l	29.87
			BKN013	1.50	HZ			15.6			22	-5.6	23				29.93			29.87	AA	l	29.87
		12	BKN013	2.50	HZ		61	16.1	45	7.0	22	-5.6	22	26	290	40	29.93		ı	M	SP	I	29.87
14			BKN013	4.00	HZ			16.1				-6.1		25			29.94		ı	M	SP	I	29.88
		12	FEW009 OVC015	3.00	HZ			16.1				-5.6					29.93		ı	M	SP	I	29.87
14	1037	12	SCT021	10.00			62	16.7	45	7.3	22	-5.6	21	29	270	37	29.93		ı	M	SP	I	29.87

Dynamically generated Tue May 03 19:11:38 EDT 2016 via http://www.ncdc.noaa.gov/qclcd/QCLCD

FIGURE B-33 EL CENTRO NAF QCLCD

U.S. Department of Commerce National Oceanic & Atmospheric Administration QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (12/2015) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level

Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type	E	Dry Bulb emp	E	Wet Bulb emp	P	ew oint emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Net 3-hr Chg (mb)	Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
13 13 13 13 13 13 13 13 13 13 13 13 13 1	0056 0156 0256 0356 0456 0556 0656 0756 0856 1056 1156 1256 1456 1456 1756 1856 1956 2056 2156 2256 2356	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		10.00 10.00 10.00 M M M M M 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00		45 43 44 47 41 47 54 62 65 68 70 71 71	21.7 19.4 18.9 17.8 17.2 17.2 17.8 17.2	37 36 37 38 35 35 35 39 44 46 47 50 51 51 51 53 53 53 53 53 54 54	1.9 2.8 2.4 2.7 3.3 3.6 6.4 7.9 8.5 9.8 10.5 10.5 11.6 10.7 11.5 11.7 11.5 12.2	26 24 25 24 26 30 26 25 28 27 28 28 39 36 42 44 43 45 45	-3.3 -3.3 -4.4 -3.9 -4.4 -3.3 -1.1 -3.3 -2.2 -2.2 -2.2 -2.2 5.6 6.7 7.2 7.2	46 51 49 41 53 51 44 40 25 22 22 21 19 20 20 20 36 33 45 50 48 50	9 9 9 9 3 8 8 8 8 6 0 0 0 5 8 8 10 3 11 8 11 8 12 4 4 2 4 2 4 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8	240 230 230	29 41 37 38	30.10 30.10 30.10 30.09 30.11 30.11 30.11 30.11 30.11 30.11 30.11 30.04 30.01 29.96 29.96 29.96 29.99 29.99 29.98 29.98			30.10 30.10 30.10 30.11 30.11 30.11 30.12 30.12 30.10 30.04 30.04 30.04 29.96 29.96 29.95 29.95 29.95 29.95 29.95 29.95	AA AA AA AA AA AA AA AA AA AA AA AA AA		30.06 30.06 30.06 30.05 30.05 30.07 30.07 30.07 30.07 30.07 30.07 30.09 29.99 29.99 29.99 29.99 29.99 29.99 29.84 29.81

Dynamically generated Tue May 03 19:09:13 EDT 2016 via http://www.ncdc.noaa.gov/qclcd/QCLCD

U.S. Department of Commerce National Oceanic & Atmospheric Administration QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (12/2015) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)		ather ype	Te	ory ulb mp	Te	Wet Bulb emp	P	ew oint emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend	Chg	Sea Level Pressure	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5			(F)	(C)	(F)	(C)		(C)	13	14	15	16	17	18	(mb)	(in. hg)	21	22	23
_		_		_	_		_									10		10	$\overline{}$			-22	
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